

What I claim is:

1. A command and control system for a plurality of turbogenerators, comprising:
2 a plurality of individual turbogenerators, each of said plurality of individual
3 turbogenerators having a controller;
4 a command and control system bus, each of said plurality of individual turbogenerator
5 controllers operably connected to said command and control system bus;
6 a plurality of disconnect switches, a disconnect switch provided in each operable
7 connection of an individual turbogenerator controller to said command and control bus;
8 a bi-directional power meter;
9 a master controller operably associated with each of the turbogenerator controllers and
10 with said bi-directional power meter to control the individual turbogenerators in a selected
11 control mode; and
12 a junction box operably connecting an electric utility, said power meter, the output of the
13 plurality of individual turbogenerators, and a load.

1. The command and control system of claim 1, and in addition:
2 a timed relay operably associated with said command and control system bus, said bi-
3 directional power meter, and said junction box to prevent the feedback of electrical power to the
4 electric utility.

1. The command and control system of claim 1 wherein said selected control mode is a
2 utility load following mode in which utility power consumption and turbogenerator power
3 generation are compared to produce an error signal which is integrated over a defined specified
4 time to produce a power demand signal.

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4. The command and control system of claim 1 wherein said selected control mode is a utility base load mode in which a defined utility power signal and the power meter signal are compared to produce an error signal which is integrated over a defined specified time to produce a power demand signal.

1 5. The command and control system of claim 1 wherein said selected control mode is a
2 base load mode in which the power meter signal and a base load demand signal are compared to
3 produce an error signal which is integrated over a defined specified time to produce a power
4 demand signal.

1 6. The command and control system of claim 1 wherein said selected control mode
2 includes the starting, stopping and loading of each of said plurality of individual turbogenerators.

1 7. The command and control system of claim 1 wherein said master controller includes a
2 sequencing and control logic system.

1 8. The command and control system of claim 7 wherein said sequencing and control
2 logic system includes a proportional-plus-integrated control to regulate power demand.

1 9. The command and control system of claim 6 wherein the start sequencing is based on
2 the use time of each of said plurality of individual turbogenerators.

1 10. The command and control system of claim 9 wherein the turbogenerator with the
2 least use time is started first.

1 11. The command and control system of claim 9 wherein the turbogenerator with the
2 most use time is shut down first.

1 12. The command and control system of claim 6 wherein the starting of the
2 turbogenerators is staggered to minimize total power draw requirements.

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13. The command and control system of claim 6 wherein a turbogenerator is automatically restarted in the event of a fault shutdown.
14. The command and control system of claim 6 wherein an inactive turbogenerator is automatically restarted in the event of a fault shutdown of an active turbogenerator.
15. The command and control system of claim 1 wherein said selected control mode includes power hysteresis bands, rate limits and setpoints integrated over time.
16. A method of commanding and controlling the operation of a plurality of individual turbogenerators, each with a turbogenerator controller, comprising the steps of:
 - 3 measuring the power production from the plurality of turbogenerators; and
 - 3 sequencing the operation of the individual turbogenerators with a master controller.
17. The method of commanding and controlling the operation of a plurality of turbogenerators of claim 16 wherein said sequencing step is to meet a power demand.
18. The method of commanding and controlling the operation of a plurality of turbogenerators of claim 16 wherein said sequencing step is to meet a user defined setpoint.
19. The method of commanding and controlling the operation of a plurality of turbogenerators of claim 16 wherein said sequencing step includes preventing repeated starting and stopping of individual turbogenerators with hysteresis bands, rate limiting, and setpoint integration.
20. The method of commanding and controlling the operation of a plurality of turbogenerators of claim 16 wherein said sequencing step includes limiting start attempts of a failed turbogenerator with a fault counter.

1 21. The method of commanding and controlling the operation of a plurality of
2 turbogenerators of claim 16 wherein said sequencing step includes balancing the run time of each
3 individual turbogenerator.

1 22. The method of commanding and controlling the operation of a plurality of
2 turbogenerators of claim 16 wherein said sequencing step includes running an individual
3 turbogenerator in an idle state to optimize transient response.

1 23. The method of commanding and controlling the operation of a plurality of
2 turbogenerators of claim 16 wherein said sequencing step includes regulating the load output of
3 each individual turbogenerator to maximize efficiency of the system.

1 24. The method of commanding and controlling the operation of a plurality of
2 turbogenerators of claim 16 wherein said sequencing step includes operating the load output of
3 all turbogenerators, except for the last to start turbogenerator, at maximum output, and regulating
the last to start turbogenerator to maintain the power demand setpoint.

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